

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended). A method of partitioning a network element into a plurality of virtual network elements, comprising:

providing a virtual network element manager that manages ~~a resource~~ resources of the network element, the resources including processor time, memory, bandwidth, and ports;

allocating a portion of the ~~resource~~ resources of the network element to one of the plurality of virtual network elements; ~~and~~

permitting the one of the plurality of virtual network elements to utilize only the portion of the ~~resource~~ resources of the network element that has been allocated to the one of the plurality of virtual network elements; and

reallocating a portion of the resources of the network element allocated to one of the virtual network elements to another one of the virtual network elements~~wherein the virtual network manager manages resources of the network element including processor time, memory, bandwidth, and ports.~~

Claim 2 (canceled).

Claim 3 (canceled).

Claim 4 (original). The method of claim 1, wherein the network element transmits data in a network.

Claim 5 (original). The method of claim 4, wherein the network element is a switch.

Claim 6 (currently amended). A network element partitioned into a plurality of virtual network elements, the network element comprising:

resources comprising processor time of a single processor, memory, bandwidth, and a plurality of ports~~a resource~~; and

a virtual network element manager that manages the resources ~~resource~~ of the network element, the virtual network element manager configured to allocate and reallocate the resources between said plurality of virtual network elements; ~~including processor time, memory, bandwidth, and ports; and~~

wherein each of said plurality of virtual network elements~~a virtual network element that is allocated a portion of the resource of the network element and is permitted to utilize only the portion of the~~ resources ~~resource~~ of the network element that has been allocated or reallocated to the virtual network element.

Claim 7 (canceled).

Claim 8 (cancelled).

Claim 9 (original). The network element of claim 6, wherein the network element transmits data in a network.

Claim 10 (original). The network element of claim 9, wherein the network element is a switch.

Claim 11 (currently amended). A network element, comprising:

~~a resource~~ resources comprising processor time, memory, bandwidth, and ports;

a means for managing ~~a resource~~ resources of the network element ~~including processor time, memory, bandwidth, and ports, said managing means configured to allocate and reallocate said resources between said plurality of virtual network elements;~~ and

a means for utilizing a portion of the resource of the network element, wherein the means for utilizing is permitted to utilize only the portion of the resource of the network element.

Claim 12 (canceled).

Claim 13 (canceled).

Claim 14 (original). The network element of claim 11, wherein the network element transmits data in a network.

Claim 15 (original). The network element of claim 14, wherein the network element is a switch.

Claim 16 (currently amended). A method of partitioning a network element that transmits data in a network into a plurality of virtual network elements, comprising:

providing a virtual network element manager that manages resources including processor time, ~~memory, bandwidth, and ports~~ of the network element;

allocating a portion of ~~each of~~ the resources of the network element to each of the plurality of virtual network elements, wherein allocating a portion of the resources comprises utilizing time slicing; and

permitting each of the plurality of virtual network elements to utilize only the portions of the resources of the network element that have been allocated to each of the plurality of virtual network elements; and

reallocating a portion of the resources of the network element allocated to one of the virtual network elements to another one of the virtual network elements.

Claim 17 (original). The method of claim 16, wherein the network element is a switch.

Claim 18 (currently amended). A network element that transmits data in a network, comprising:

resources including processor time, memory, bandwidth, and ports of the network element;

a virtual network element manager that manages the resources of the network element utilizing time slicing techniques; and

a plurality of virtual network elements that are each allocated portions of the resources of the network element and are permitted to utilize only the portions of

the resources of the network element that have been allocated to each of the virtual network elements.

Claim 19 (original). The network element of claim 18, wherein the network element is a switch.

Claim 20 (canceled).

Claim 21 (canceled).

Claim 22 (currently amended). A method of partitioning a network element that transmits data in a network into a plurality of virtual network elements, comprising:

receiving input as to a portion of at least one resource of the network element to allocate to one of the plurality of virtual network elements, wherein the at least one resource of the network element is processor time, memory, bandwidth, or ports;

allocating the portion of the network element to the one of the plurality of virtual network elements;

receiving input specifying an application binary for the virtual network element;

executing the application binary for the virtual network element;~~and~~

permitting the one of the plurality of virtual network elements to utilize only the portion of the at least one resource of the network element that has been allocated to the one of the plurality of virtual network elements; and

reallocating a portion of the resources of the network element allocated to one of the virtual network elements to another one of the virtual network elements.

Claim 23 (canceled).

Claim 24 (canceled).

Claim 25 (canceled).

Claim 26 (original). The method of claim 22, wherein receiving input as to a portion of at least one resource includes:

receiving input as to a portion of processor time of the network element to allocate to one of the plurality of virtual network elements;

receiving input as to a portion of memory of the network element to allocate to one of the plurality of virtual network elements; and

receiving input as to a portion of ports of the network element to allocate to one of the plurality of virtual network elements.

Claim 27 (original). The method of claim 26, wherein the network element transmits data in a network.

Claim 28 (original). The method of claim 27, wherein the network element is a switch.

Claim 29 (previously presented). The method of claim 1 further comprising:

querying the virtual network element manager for available ports; and
updating available ports based on information received from the virtual network element manager.

Claim 30 (new): The method of claim 1 wherein allocating a portion of the resources comprising receiving user input defining the portion of resources to allocate to each of said plurality of virtual network elements.

Claim 31 (new): The method of claim 1 wherein managing processor time comprises utilizing time slicing techniques.